USSN 09/364,967
Group Art Unit: 2857
Docket No. 151P08035US01

REMARKS

This response is submitted within two (2) months of the mailing date of the Office Action, made FINAL, of May 20, 2004. Consideration of these remarks is respectfully requested and an indication of allowability of the application is solicited prior to the expiration of the shortened statutory period of response, expiring on August 20, 2004.

Claims 1 – 3, 5 – 10, 12 – 18, 20, 22 – 28, 30 – 47 are pending in this application.

Claims 1 – 4, 6 – 10, 14 – 16, 18, 22 – 30 and 33 – 36 have been rejected. Claims 5, 12, 13, 31, 32 and 37 – 47 have been objected to. Claims 17 and 20 have been allowed.

Claims

The claims previously presented have been set out above. No claims have been amended.

Rejections Under 35 USC § 102 by Snell

Claims 1 – 4, 7, 9, 29, 30, 35 and 36 have been rejected under 35 USC § 35 USC § 102(b) as being anticipated by U.S. Patent No. 5,741,307, Kroll. These rejections are respectfully traversed.

Operation of Kroll

Kroll discloses a method for determining the recommended replacement time of a battery of an implantable electronic medical device.[1] The preferred implementation of Kroll is an implantable cardioverter using a battery as a power source to charge a capacitor to deliver the therapeutic electrical shock. Kroll teaches the independent measurement of at least two different indicators of battery strength.[2] One of the indicators utilized is terminal battery voltage.[3] The second indicator is capacitor charge

[1] U.S. Patent No. 5,741,307, Kroll, Abstract, lines 1 – 8
[2] Kroll, column 3, lines 13 – 16
[3] Kroll, column 3, lines 26 – 29

time.[4] If either the terminal battery voltage or the capacitor charge time, if the capacitor charge time exceeds the predetermined limit in two successive tests, exceeds predetermined limits, a Recommended Replacement Time ("RRT") signal is immediately issued.[5]

In addition to periodically measuring the terminal battery voltage and the capacitor charge time, Kroll also teaches monitoring the capacitor charge time during delivery of a therapeutic shock.[6] In either case, a RRT signal is immediately issued if the capacitor charge time exceeds the predetermined limit.

Note that the capacitor charge time described in Kroll is merely a function of the time required to charge the internal capacitor once a discharge/charge determination is made. The time measured is only the time required for the charging operation and has no bearing whatsoever as to the length of time the battery has been operating. It is a function of the operational status of the battery and the capacitor and distinctly not a function of the length of time that the battery has been operating.

Also note that Kroll teaches immediately signaling a RRT signal whenever the terminal battery voltage falls below a predetermined limit or whenever the capacitor charge time exceeds a predetermined limit. There is no determination whatsoever as to the length of service time remaining in the life of the battery. Either the battery is deemed operational or it is deemed replaceable. No other function or calculation is described.

Kroll merely describes a standard battery voltage alarm with the addition of a capacitor charge time alarm. Kroll does show, disclose or suggest any circuitry to determine the remaining life of battery.

It is respectfully asserted that the Examiner's assertion that Kroll teaches "obtaining a time that the power source has been operating through an actual measurement" is incorrect. The Examiner refers to several passage in Kroll, however,

[4] Kroll, column 3, lines 32 – 34
[5] Kroll, abstract, lines 13 – 23; column 3, lines 26 - 40
[6] Kroll, column 9, line 37 – column 10, line 57

each such passage clearly recites a determination of the capacitor charge time and not the length of time that the battery has been operating.

Further, it is respectfully submitted that Examiner's assertion that Kroll teaches "determining the remaining life of the power source based on the capacity information of the power source and the time that the power source has been operating" is incorrect. The Examiner again refers to several passages in Kroll, however, each such passage merely recites the sounding of an alarm signal, namely the RRT signal.

Independent Claim 1

Claim 1 clearly is not anticipated by and is patentable over Kroll.

Claim 1 recites obtaining a time that the power source has been operating through an actual measurement (see claim 1, lines 6 – 7). As discussed above, Kroll does not teach nor suggest obtaining a time that the power source has been operating. Kroll only obtains a time required to charge the capacitor which has little to do the length of time that the power source has been operating. It is respectfully submitted that Kroll does not teach, show or suggest this claim limitation.

Claim 1 also recites determining the remaining life of the power source based on the capacity information and the time that the power source has been operating. Again, Kroll completely fails this limitation. Kroll simply determines if the battery voltage limit is exceeded or if the capacitor charge time limit is exceeded and issues an alarm accordingly. Kroll does not predict replacement time. Rather, Kroll simply signals actual replacement time.

Thus, it can be seen that not only does Kroll not anticipate claim 1, Kroll operates in a fundamentally different manner and fails to achieve the advantageous results made possible by the recitations of claim 1.

It is respectfully submitted that claim 1 is patentable over Kroll and that the rejection of claim 1 over Kroll should be withdrawn.

Independent Claim 30

Claim 30 clearly is not anticipated by and is patentable over Kroll.

Claim 30 recites "wherein the processor determines, based on the voltage of the source of power, capacity information of the power source and determines the remaining life of the power source based on the capacity information of the power source and a time that the power source has been operating obtained through an actual measurement" (see claim 30, lines 18 – 21).

As discussed above, Kroll does not teach nor suggest obtaining a time that the power source has been operating. Kroll only obtains a time required to charge the capacitor which has little to do the length of time that the power source has been operating. It is respectfully submitted that Kroll does not teach, show or suggest this claim limitation.

Claim 30 also recites determining the remaining life of the power source based on the capacity information of the power source and a time that the power source has been operating. Again, Kroll completely fails this limitation. Kroll simply determines if the battery voltage limit is exceeded or if the capacitor charge time limit is exceeded and issues an alarm accordingly. Kroll does not predict replacement time. Rather, Kroll simply signals actual replacement time.

Thus, it can be seen that not only does Kroll not anticipate claim 30, Kroll operates in a fundamentally different manner and fails to achieve the advantageous results made possible by the recitations of claim 30.

It is respectfully submitted that claim 30 is patentable over Kroll and that the rejection of claim 30 over Kroll should be withdrawn.

Claims 2 – 4, 6, 7, 9, 29, 30, 35 and 36

Claims 2 – 4, 6, 7, 9, 29, 30, 35 and 36 are all dependent upon one or more of the claims discussed above. Since claims 2 – 4, 6, 7, 9, 29, 30, 35 and 36 contain all of the limitations of the claims from which they depend, these claims should all be allowable on the basis of the same amendments and the same arguments presented above with respect to the claims from which they depend, including independent claims 1 and 30.

It is respectfully submitted that claims 2 – 4, 6, 7, 9, 29, 30, 35 and 36 are patentable over Kroll and that the rejection of claims 2 – 4, 6, 7, 9, 29, 30, 35 and 36 over Kroll should be withdrawn.

Rejections Under 35 USC § 103

Claims 8, 10, 14 – 16, 18, 22 – 28, 33 and 34 have been rejected under 35 USC § 35 USC § 35 USC § 103(a) over Kroll, and in some cases, in view of differing combinations of other documents including Renirie et al, Arai et al, Merritt et al and Canny et al. The rejection of claims 8, 10, 14 – 16, 18, 22 – 28, 33 and 34 are respectfully traversed.

Kroll has been applied in the same manner as to previously discussed claims 1 and 30 from which all of claims 8, 10, 14 – 16, 18, 22 – 28, 33 and 34 depend.

Renirie et al has been cited to show determining the power source capacity used and then subtracting this value from the total power source capacity.

Arai et al has been cited to show calculating the remaining power capacity / power source capacity remaining by using a non-linear formula.

Merritt et al has been cited to show informing the user of where in the power source life the power source is.

Canny et al has been cited to show determining whether the remaining power source capacity falls within a predetermined limit.

None of the additionally cited documents (Renirie et al, Arai et al, Merritt et al and Canny et al) affect the arguments presented above with respect to the allowability of the claims 1 and 30 from which claims 8, 10, 14 – 16, 18, 22 – 28, 33 and 34 depend.

Claims 8, 10, 14 – 16, 18, 22 – 28, 33 and 34 are all dependent upon one or more claims for which allowability has been argued above, including either of independent claims 1 and 30. Since claims 8, 10, 14 – 16, 18, 22 – 28, 33 and 34 contain all of the limitations of the claims from which they depend, including ultimately claims 1 or 30, claims 8, 10, 14 – 16, 18, 22 – 28, 33 and 34 should be allowable on the basis of the same

amendments and the same arguments presented above, including the arguments presented with respect to claims 1 and 30.

It is respectfully submitted that 8, 10, 14 – 16, 18, 22 – 28, 33 and 34 are patentable over Snell in view of any and all of the additionally cited documents and that the rejection of claims 8, 10, 14 – 16, 18, 22 – 28, 33 and 34 over Kroll in view of the additionally cited documents should be withdrawn.

Summary

In view of the amendments made and the arguments presented, claims 1 – 4, 6 – 10, 14 – 16, 18, 22 – 30 and 33 – 36 should be allowable, this application should be in condition for allowance and a notice to that is earnestly solicited.

Respectfully Submitted,

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